DOCUMENT RESUME

ED 273 241 IR 012 232

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TITLE Implementing Equal Access Computer Labs.
PUB DATE 86
NOTE 95p.; Paper presented at the Florida Instructional Computing Conference (Orlando, FL, January 1986).
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Computer Assisted Instruction; *Computer Literacy; Computer Managed Instruction; Cost Effectiveness; *Courseware; Criteria; *Disabilities; Equal Education; *Input Output Devices; Learning Laboratories; *Microcomputers; Program Implementation; *Special Education
IDENTIFIERS *Palm Beach County Schools FL

ABSTRACT

This paper discusses the philosophy followed in Palm Beach County to adapt computer literacy curriculum, hardware, and software to meet the needs of all children. The Department of Exceptional Student Education and the Department of Instructional Computing Services cooperated in planning strategies and coordinating efforts to implement equal access computer labs. The handout summarizes Palm Beach County's position on computer literacy for all students; summarizes the need to adapt the Palm Beach County Unified Curriculum for Computer Literacy for the different exceptionalities; provides guidelines for establishing criteria and systematic observation of students who may require adaptive devices; and provides a list of suggested hardware to place in an equal access lab with cost analysis comparisons and a partial list of suggested software to teach computer literacy to students in exceptional student education programs. Appended materials include a listing of adaptive peripheral devices for computers; a listing of Florida Instructional Technology Resource Centers; a list of applied technology resources; a selected ERIC bibliography; and a guide to special education technology prepared by Bob Reid and Diane Herrera Shepard, at the Developmental Center for Handicapped Persons, Utah State University. (Author/DJR)

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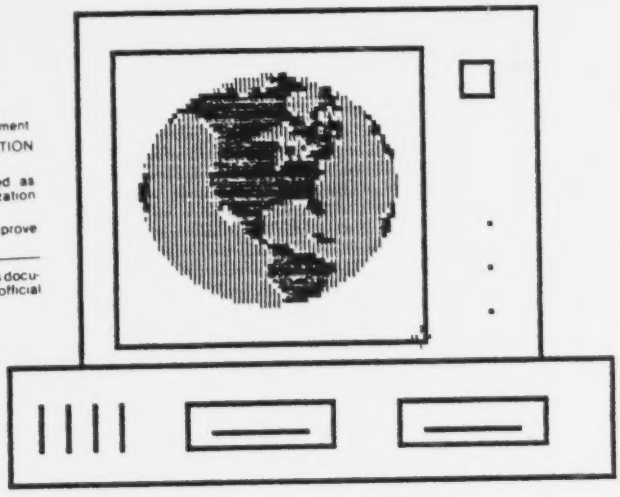

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EQUAL ACCESS COMPUTER LABS

FICC 1986

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This product was developed in part through the Instructional Technology Services Grant awarded to Palm Beach County, on behalf of FDLRS/Alpha Associate Center. The Instructional Technology Services Grant is funded through Federal Assistance for the Education of the Handicapped, P.L. 91-230, EHA, Part B, to provide instructional technology support services to exceptional student education programs. The Florida Diagnostic and Learning Resources System (FDLRS) is funded through Federal Assistance for the Education of the Handicapped, P.L. 91-230, EHA, Part B, and State Assistance through General Revenue appropriations to provide diagnostic and instructional support services to Florida's exceptional student education programs, statewide.

TABLE OF CONTENTS

I. Introduction

II. Hardware

III. Software

IV. Criteria and Observation Form to Use with Exceptional Students

Appendix I - Listing of Computer Adaptive Peripheral Devices

Appendix II - Florida Instructional Technology Resource Centers

Appendix III - Applied Technology Resource Materials List

Appendix IV - Selected ERIC Bibliography

Appendix V - SECTOR Project Listing, Prepared by Bob Reid and Diane H. Shepard. (Permission to reproduce granted by Bob Reid, Utah State University.)

On November 29, 1975, President Ford signed into law the **Education for All Handicapped Children Act, P. L. 94-142.** With this legislation, the role of the federal government in the education of the handicapped has significantly increased, and the responsibilities of local and state education agencies has been dramatically altered. The law includes provisions designed to ensure that all handicapped children have a free and appropriate public education available, to ensure that the rights of handicapped children and their parents are protected, and to assist state and local education agencies in providing this education.

A free appropriate public education refers to special education and related services which a) are provided at public expense under public supervision and direction and without charge to the parents, b) meet the standards of the state educational agency, c) include preschool, elementary school or secondary school education, and d) are provided in conformity with an individualized education program.

Each state and local education agency must take steps to insure that handicapped children have available to them **the variety of programs and services available to nonhandicapped children,** including art, music, industrial arts, home economics, vocational education, physical education and nonacademic and extracurricular services and activities.

Almost exactly eight years after the passge of P.L. 94-142, the Congress provided another affirmation of the federal commitment to special education by passing P.L. 98-199, Amendments to the Education of the Handicapped Act. Some of the features of P.L. 98-199 include:

establishment of grants to states for developing and implementing comprehensive plans to provide early childhood education to all handicapped children from birth.

establishment of a new program to stimulate and improve secondary special education and **transition** to postsecondary education, vocational rehabilitation, continuing education, employment, independent living, and other adult services.

establishment of grants for parent training and information.

emphasis of federal research on the improvement of teaching methodology and curriculum, and the **application of new technologies toward improved instruction.**

"The new emphasis on "excellence in education" and a resurgence of federal programs for special education may converge to push all of us - parents, teachers, administrators, volunteers, and advocates - into the higher quality level of instruction and curriculum offerings that we have dreamed about for exceptional students."

Dr. Wendy M. Cullar
Chief of the Bureau of Education for Exceptional Students
State of Florida Department of Education

Department of Instructional Computer Services
Palm Beach County Schools
Five Year Plan Implementation

INTRODUCTION

The Department of Micro-Computer Instructional Services (M.C.I.S.) was created by board action on November 16, 1983 at no additional cost by the re-allocation of currently budgeted funds and the re-assignment of personnel then employed by the system. The organization of this department within the Division of Regular Instruction was to emphasize its primary functions of developing and implementing appropriate computer instructional programs, developing and implementing computer managed instructional programs (CMI) enhancing the utilization of computer assisted instructional programs (CAI) integrated with the unified curriculum, coordinating the development of micro-computer administrative applications, and coordinating the implementation of requisite staff development and in-service programs. In addition to these instructional goals, the department was charged with the coordination of support services including the coordination of selection, evaluation, installation, and maintenance of hardware.

The initial staffing for FY'84 included a Director; appointed in February of 1984; two specialists, re-assigned from other departments in November of 1983; two resource teachers, one appointed in January 1984; and a Secretary, appointed in January 1984. This staffing level was sufficient to continue the current initiatives of implementation and support of the Elementary Curriculum Management System, the Senior High attendance program, and several CAI and CMI pilot programs already in place throughout the District. In addition, this "start up" staff was to develop and implement planning strategies for the systematic development, implementation, and evaluation of programs which will allow for the attainment of the following goals:

I. Development and implementation, and evaluation of an appropriate K-12 computer literacy program which will insure the acquisition of related skills by all students.

II. Development, implementation, and evaluation, of appropriate 6-12 computer education courses which will expand the unified curriculum to meet the needs of those students desirous of instruction in computer programming.

III. Coordination of the development, implementation, and evaluation of computer assisted instructional programs integrated with current components of the K-12 unified curriculum.

IV. Development, implementation, and evaluation of appropriate computer managed instructional programs designed as an integral part of and to enhance the K-12 unified curriculum.

V. Coordination of the evaluation, selection, acquisition, and maintenance of hardware, firmware, and software.

VI. Development, implementation,, and evaluation of staff development and in-service programs requisite for the successful implementation of district-wide micro-computer instructional goals and objectives.

Department personnel have been temporarily housed, until recently, on space available basis in building 502 and 510, specifically in the divisional office and in space assigned to the department of program evaluation. In late February, the department moved into portable office facilities located between buildings 502 and 503 at the Belvedere Road complex. These facilities will more than adequately provide for the housing of department personnel and equipment until full staffing is achieved. The computer training laboratory will continue to be housed in building 510.

PHILOSOPHY

The creation of the department of Micro-Computer Instructional Services was in response to the rapidly expanding field of instructional computing, the proliferation of hardware and software designed to provide both computer assisted instruction and computer managed instruction within the classroom and the recognized need for individuals to become aware of the impact and use of computers within society.

The continuing refinement of the Micro-Computer has impacted every area of the educational system and will continue to do so for the foreseeable future. While some authors link the infiltration of micro-computers into the school system and classroom to that of the motion picture projector or the television, and warn of just another fad which will soon decline popularity there is no doubt that the interactive

characteristics and potential place the micro-computer in a category far beyond that of just another "instructional aid". The applications of the micro-computer within all components of the curriculum are wide-ranging. The integration of the micro-computer in the classroom with other school center functions greatly expands such applications and enhances the value of such equipment. The micro-computerization of administrative and information functions is all but limitless.

While the coordinated implementation of computer literacy and computer education programs, along with requisite hardware and software, in all school centers is a primary concern, it is also encumbent upon the School Board of Palm Beach County to address questions such "computer equity" at the community level. This department, working in conjunction with other departments and local community agencies can do much to alleviate this concern. Planning is now underway to develop several models which will insure more equitable access of micro-computers after normal school hours by both students and adults within all communities. Examples of these models include access through Adult and Community Education facilities, through Federal Program education facilities, thorough self-contained mobile laboratories, through satellite computer centers located at various community facilities, and through a lending program.

While the department of Micro-Computer Instructional Services has been assigned major development and implementation responsibilities in certain areas, it is beyond its resources to develop, implement, and evaluate all system-wide applications. the intent of the department, as delineated by the goal statements, is to coordinate the system-wide development of these applications and programs and provide technical expertise and support services which will enhance the overall development process . The systematic development, implementation, and evaluation of micro-computer programs and applications will require the commitment of resources from the interaction with many departments within the system. The success of the department will, to a large extent be measured by the degree to which the system implements an orchestrated program of micro-computerization delineated by the goals cited above.

IMPLEMENTING EQUAL ACCESS COMPUTER LABS

INTRODUCTION

Definition of Computer Literacy

Computer Literacy means different things to different people. To some it means inserting the terms RAM and ROM or bits and bytes into a conversation dealing with computers. To others it means using a word processor or accessing a data base. To those very serious about computers it means knowing how to write computer programs in languages such as Pascal, BASIC, or C.

In Palm Beach County we believe that a computer-literate student should understand what a computer is, what a computer can or cannot do, how computers are used, and when it is appropriate to use a computer. The computer-literate student should also have the skills necessary to use a computer as a tool for learning. This usually involves such tasks as word processing, information retrieval, and problem-solving.

For the special education student we can change this definition to meet the needs of individual students. For some it might be using the computer as a tool for communication, to allow those who cannot speak to "talk" or to allow those who cannot see to hear what they are typing. Other students might use the computer as a tool to access information previously not available to them because of their handicaps. Still other students might learn to use the computer as a job skill for the future, such as entering data on a terminal. The major emphasis in using computers with special education students is as a tool to open up new worlds and access new knowledge.

Addressing the Problem of Equal Access

Children are incredibly diverse in their abilities and interests. Some like to draw, but dislike geometry. Others like to write creative stories, but dislike the mechanics of doing research reports. Some children can work for hours on a task, while others can stay on task for only minutes. Some children can see a computer screen, others cannot. Some children can easily master the computer keyboard, and there are those who cannot even press the Space Bar. This diversity of students can all have their abilities developed through the stimulating environment that the computer can provide. It is in the field of education that we will see one of the most significant contributions of computers, that of providing individual instruction to meet individual needs.

In order to utilize the full potential of computers in education we must have good educational software that supports the curriculum and meets the needs of individual students. Providing a computer literacy program for special education students often means making adaptations to the curriculum, to computer hardware specifications, and to software selection. In Palm Beach County we are beginning to address this concern of equal access to

computers for all students.

In April of 1984 the Instructional Computer Services Department was formed by the School Board with a 10 million dollar budget over a 5 year period. The department was charged with the responsibilities of developing and implementing a K-12 district-wide computer literacy program to insure the acquisition of computer-related skills by all students as well as the development and implementation of a computer education curriculum for grades 6-12. In addition, the department was charged with the coordination and development of district-wide programs in computer-enhanced instruction; computer-managed instruction; staff development activities which provide in-service to teachers, administrators, and other system personnel; and finally with the acquisition, installation, and maintenance of instructional microcomputers in the district.

The first phase of the computer literacy program began in September, 1984 and involved the installation of computer literacy labs in each of the district's 14 high schools. The number of computers installed was based on current availability of machines in the school and student enrollment. The second phase began in April of 1985 and involved the installation of computer labs consisting of 15 IBM PCs and 3 printers in each of the 17 middle/junior high schools in the district. The computer literacy and computer education curriculums for grades 6-12 were developed by writing teams in the summers of 1984 and 1985. Field trial editions of these courses are being implemented this school year. The district also provided software to support the curriculum to insure "hands-on" computer experiences for students.

The third phase involved the installation of computer labs at several elementary school pilot sites. The remainder of the district's 60 elementary schools, as well as, the special education centers will have labs installed over the next two school years. Elementary schools will be receiving 14 IBM PCjrs, 1 IBM PC, and 3 printers. The Instructional Computing Services Department will be working closely with the Exceptional Student Education Department to provide the special education centers with the appropriate hardware, software, and periherals necessary to meet the needs of the exceptional students.

CONSIDERATIONS FOR THE EXCEPTIONAL STUDENT EDUCATION CENTERS

1. TYPICAL HARDWARE CONFIGURATION IN LAB

5 PC JR (includes monitor,system,keyboard)
1 Proprinter (includes cable,stand,adapter)

5 Apple IIe (includes monitor,system/keyboard)
1 Imagewriter II (includes cable)

10 Tables

Adaptive devices as justified by student population

2. EXAMINE THE SPACE REQUIREMENTS FOR COMPUTERS

A dedicated lab could exist as a resource room.
Computers could be placed in individual classrooms.

3. SECURITY AND WIRING MUST BE PROPOSED

A lab would localize the need for wiring and security.
Computers in individual rooms may lessen the requirement
for wiring but add to the cost for security.

4. TEACHER TRAINING : THE COMPUTER AND THE ADAPTIVE DEVICES

Training should allow the teachers working knowledge of
the computers and to the devices mandated by their
specific population.

5. THE FINANCIAL RESPONSIBILITY FOR IMPLEMENTATION

What fragment of the cost is the responsibility of the
Instructional Computing Department and/or the
Exceptional Student Education Group.

6. WHAT SOFTWARE IS APPROPRIATE

Software should be a function of the group it is to
serve. Several levels of mental ability may need to be
served.

7. SPECIFIC COURSE DESCRIPTIONS ARE NEEDED

In that the population may vary widely, course descriptions may need to be tailored to the population.

8. CONSIDER THE LOW INCIDENCE POPULATION

Not all E.S.E. centers will have the same target population. The adaptive devices needed should be coordinated to address the identified need

TYPICAL LAB CONFIGURATION

DESCRIPTION	AMOUNT	UNIT COST	PROJECTED COST
IBM PC JR (includes)	5	650.00	3250.00
COLOR MONITOR			
128K SYSTEM			
KEYBOARD			
IBM PROPRINTER	1	451.00	451.00
CABLE			
STAND			
TABLES (30 x 48)	10	95.00	950.00
APPLE IIe (includes)	5	1015.00	5075.00
COLOR MONITOR			
128K SYSTEM			
APPLE IMAGEWRITER II	1	486.00	486.00
KIT & CARD			
TOTAL COST FOR HARDWARE ONLY			10212.00

TYPICAL LAB CONFIGURATION

DESCRIPTION	AMOUNT	UNIT COST	PROJECTED COST
IBM PC JR (includes)	5	650.00	3250.00
COLOR MONITOR			
128K SYSTEM			
KEYBOARD			
IBM PROPRINTER	1	451.00	451.00
CABLE			
STAND			
TABLES (30 x 48)	10	95.00	950.00
APPLE IIe (includes)	5	1015.00	5075.00
COLOR MONITOR			
128K SYSTEM			
APPLE IMAGEWRITER II	1	486.00	486.00
KIT & CARD			
TOTAL COST FOR HARDWARE ONLY			10212.00
TYPICAL ELEMENTARY LAB COST			14540.00
PC JR COMPLETE	14	650.00	9100.00
PC COMPLETE	1	2437.00	2437.00
PRINTER COMLETE	3	526.00	1578.00
TABLES	15	95.00	1425.00

ADAPTIVE DEVICE "WISH LIST"		TOTAL COST	16396.10
ADAPT.DEV.INTERFACE	5	30.00	150.00
ADAPT.FIRM.CARD	5	400.00	2000.00
APPLE JOYSTICK	5	41.97	209.85
APPLE MOUSE	5	104.30	521.50
CHATERBOX (READ DEV)	5	895.00	4475.00
ECHO II SPEECH SYN.	5	99.50	497.50
KEYBOARD MEMBRANE	5	24.95	124.75
KEYBOARD TEMPLATE	5	15.00	75.00
KLEERTEX (FOR BLIND)	5	15.00	75.00
MUPPET KEYBOARD	5	59.50	297.50
ADAPT SWITCH KIT	5	395.00	1975.00
UNICORN KEYBOARD	5	295.00	1475.00
ZENITH RGB MON large	5	729.00	3645.00
card for monitor	5	175.00	875.00

(materials for 5 complete apple stations)

ADAPTIVE DEVICE "REALISTIC LIST"		TOTAL COST	5213.44
ADAPT.DEV.INTERFACE	2	30.00	60.00
ADAPT.FIRM.CARD	2	400.00	800.00
APPLE JOYSTICK	2	41.97	83.94
APPLE MOUSE	2	104.30	208.60
CHATERBOX (READ DEV)	1	895.00	895.00
ECHO II SPEECH SYN.	1	99.50	99.50
KEYBOARD MEMBRANE	2	24.95	49.90
KEYBOARD TEMPLATE	2	15.00	30.00
KLEERTEX (FOR BLIND)	1	15.00	15.00
MUPPET KEYBOARD	3	59.50	178.50
ADAPT SWITCH KIT	1	395.00	395.00
UNICORN KEYBOARD	2	295.00	590.00
ZENITH RGB MON large	2	729.00	1458.00
card for monitor	2	175.00	350.00

(quantity justified by population)

NOTE :THESE PROJECTIONS DO NOT INCLUDE DEVICES FOR THE IBM COMPUTERS. THERE ARE OTHER SIMILAR DEVICES AVAILABLE

ELEMENTARY COMPUTER LITERACY SOFTWARE

1. IBM PCjr Keyboard Adventure
   Used for keyboarding
   Stored in ROM
   Free with the computer

2. IBM PCjr Sampler
   Demonstrates computer uses
   Free with the computer

3. Kids On Keys
   Used for keyboarding
   Available from Spinnaker Software
   15 copies at $24.95*

4. Kidwriter
   Primary level word processor
   Available from Spinnaket Software
   15 copies at $29.95*

5. HomeWord
   Intermediate leve word processor
   Available from South-Western Publishing Co.
   15 copies at $38.75*

6. Adventures in Math
   Used for keyboarding (function keys, numbers, arrow keys)
   Available from IBM
   15 copies at $24.50

7. Turtle Power
   LOGO turtle graphics program
   Available from IBM
   15 copies at $35.00

Many of these programs can be used effectively with ESE students, especially the LOGO program, Turtle Power and the word processing programs, Kidwriter and HomeWord.

*List price, discounts available with large quantity purchases.

MIDDLE SCHOOL COMPUTER LITERACY SOFTWARE

1. Introduction to the IBM PC
   Free with the computer

2. Introduction to Personal Computing
   Available from Comprehensive Software
   15 copies at $59.95*

3. The Instructor
   Available from Individual Software
   15 copies at $44.95*

4. HomeWord
   Available from South-Western Publishing Co.
   15 copies at $38.75*

5. Typing Instructor
   Available from Individual Software
   15 copies at $49.95*

Textbook: Scholastic COMPUTING, Scholastic Publishing Co.

Many programs can be use with ESE students.

*List price, discounts available with large quantity purchases.

HIGH SCHOOL COMPUTER LITERACY SOFTWARE

1. Introduction to the IBM PC
   Free with the IBM PC

2. The Instructor
   Available from Individual Software
   15 copies at $44.95*

3. Typing Instructor
   Available from Individual Software
   15 copies at $49.95*

4. SuperCalc3
   Available from Chambers
   15 copies at $59.95*

5. pfs: Write
   Available from Scholastic
   3 Lab Packs each containing 5 program disks,
   5 learning activities disks, and a User's Handbook
   at $185.00*

6. pfs: File
   Available from Scholastic
   3 Lab Packs each containing 5 program disks,
   5 learning activities disks, and a User's Handbook
   at $185.00*

7. pfs: Report
   Available from Scholastic
   1 at $99.95*

Textbook: Understanding Computers, West Publishing Co.

Many programs can be used with ESE students.

*List price, discounts available with large quantity purchases.

PROJECTED SOFTWARE COST ANANYSIS

ELEMENTARY LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
IBM KEYBOARD ADVENTURE	15	FREE	$.00
IBM PC SAMPLER	15	FREE	$.00
KIDS ON KEYS	15	$24.95	$374.25
KIDWRITER	15	$29.95	$449.25
HCMEWORD	15	$38.75	$581.25
ADVENTURES IN MATH	15	$24.50	$367.50
TURTLE POWER	15	$35.00	$525.00
		TOTAL COST	$2,297.25

PROJECTED SOFTWARE COST ANANYSIS

MIDDLE / JUNIOR LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
INTRODUCTION TO IBM PC	15	FREE	$.00
INTRO TO PERSONAL COMPUTING	15	$59.95	$899.25
THE INSTRUCTOR	15	$44.95	$674.25
HOMEWORD	15	$38.75	$581.25
TYPING INSTRUCTOR	15	$49.95	$749.25
		TOTAL COST	$2,904.00

PROJECTED SOFTWARE COST ANANYSIS

HIGH SCHOOL LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
INTRODUCTION TO IBM PC	15	FREE	$.00
THE INSTRUCTOR	15	$44.95	$674.25
TYPING INSTRUCTOR	15	$49.95	$749.25
SUPERCALC 3	15	$59.95	$899.25
pfs : FILE (lab pack)	3	$185.00	$555.00
pfs : REPORT	1	$99.95	$99.95
pfs : WRITE (lab pack)	3	$185.00	$555.00
		TOTAL COST	$3,532.70

ELEMENTARY ESE COMPUTER LITERACY SOFTWARE

FOR IBM COMPUTERS

1. IBM PCjr Keyboard Adventure
   Used for keyboarding
   Stored in ROM
   Free with computer

2. IBM PCjr Sampler
   Demonstrates computer uses
   Free with computer

3. Kids on Keys
   Used for keyboarding
   Available from Spinnaker Software
   $24.95

4. Kidwriter
   Primary level word processor
   Available from Spinnaker Software
   $24.95

5. Homeward
   Intermediate level word processor
   Available from South-Western Publishing Co.
   $38.75

6. Adventures in Math
   Used for keyboarding (function keys, numbers, arrow keys)
   Available from IBM
   $24.50

7. Turtle Power
   LOGO turtle graphics program
   Available from IBM
   $35.00

FOR APPLE COMPUTERS

1. Apple at play
   Demonstrates computer uses
   Free with computer

2. Apple at work
   Demonstrates computer uses
   Free with computer

3. Compukeys
   Used for keyboarding (graphics illustrate hands on key positions)
   Available from CompuKeys Inc.
   Discounts available for quantity orders

4. Magic Slate
   Word processor with option of 10, 20, 40, or 80 column characters
   Available from Sunburst
   $89.95

5. Talking Writer
   Keyboarding and word processing with Echo Speech Synthesizer
   Available from Cross Educational Software
   $24.95

6. Alligator Mix
   Used for keyboarding number drill
   Available from SVE
   $44.00

7. Turtle Tracks
   LOGO turtle graphics program
   Available from Scholastic
   $39.95

8. Computer Literacy Adventures of the Lollipop Dragon
   Used for keyboarding and computer literacy
   Available from SVE
   $239.00

MIDDLE SCHOOL ESE COMPUTER LITERACY SOFTWARE

For IBM PCjr COMPUTERS

1. Introduction to IBM PC
   Free with computer

2. The Instructor
   Available from Individual Software
   $44.95

3. HomeWord
   Available from South-Western Publishing Co.
   $38.75

4. Typing Instructor
   Available from Individual Software
   $49.95

FOR APPLE COMPUTERS

1. Apple at work
   Free with computer

2. Computer Awareness
   Available from SVE
   $195.00

3. Magic Slate
   Available from Sunburst
   $89.95

4. Talking Writer
   Available from Cross Educational Software
   $24.95

5. CompuKeys
   Available from CompuKeys Inc.
   Discount prices with quantity orders

HIGH SCHOOL COMPUTER LITERACY SOFTWARE

FOR IBM PCjr COMPUTERS

1. Introduction to the IBM PC
   Free with computer

2. The Instructor
   Available from Individual Software
   $44.95

3. Typing Instructor
   Available from Individual Software
   $49.95

4. Friendly Filer
   Available from Grolier
   $49.95

5. Easy Graph
   Available from Grolier
   $49.95

6. Homeword
   Available from South-Western Publishing Co.
   $38.75

FOR APPLE COMPUTERS

1. Apple at work
   Free with computer

2. Computer Literacy: Introduction
   Available from SVE
   $49.95

3. T.N.T.
   Used for keyboarding
   Available from Grolier
   $49.95

4. Friendly Filer
   Available from Grolier
   $49.95

5. Easy Graph
   Available from Grolier
   $49.95

6. Magic Slate
   Available from Sunburst
   $89.95

7. Talking Writer
Available from Cross Educational Software
$24.95

PROJECTED SOFTWARE COST ANALYSIS

ESE ELEMENTARY LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
IBM KEYBOARD ADVENTURE	5	FREE	$.00
IBM PC SAMPLER	5	FREE	$.00
KIDS ON KEYS	5	$24.95	$124.75
KIDWRITER	5	$29.95	$149.75
HOMEWARD	5	$38.75	$193.75
ADVENTURES IN MATH	5	$24.50	$122.50
TURTLE POWER	5	$35.00	$175.00
APPLE AT PLAY	5	FREE	$.00
APPLE AT WORK	5	FREE	$.00
COMPUKEYS (LAB PACK)	1	$100.90	$100.90
MAGIC SLATE	5	$89.95	$449.75
TALKING WRITER	5	$24.95	$124.75
ALLIGATOR MIX	5	$44.00	$220.00
TURTLE TRACKS	5	$39.95	$199.75
ADV. OF THE LOLLIPOP DRAGON	1	$239.00	$239.00
		TOTAL COST	$2,099.90

PROJECTED SOFTWARE COST ANALYSIS

ESE MIDDLE / JUNIOR LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
INTRODUCTION TO IBM PC	5	FREE	$.00
THE INSTRUCTOR	5	$44.95	$224.75
HOMEWORD	5	$38.75	$193.75
TYPING INSTRUCTOR	5	$49.95	$249.75
APPLE AT WORK	5	FREE	$.00
COMPUTER AWARENESS (COMPLETE)	1	$195.00	$195.00
COMPUTER AWARENESS (DISK ONLY)	4	$79.00	$316.00
MAGIC SLATE	5	$89.95	$449.75
TALKING WRITER	5	$24.95	$124.75
COMPUKEYS (LAB PACK)	1	$100.90	$100.90
		TOTAL COST	$1,854.65

PROJECTED SOFTWARE COST ANALYSIS

ESE HIGH SCHOOL LEVEL

TITLE	AMOUNT	UNIT COST	TOTAL
INTRODUCTION TO IBM PC	5	FREE	$.00
THE INSTRUCTOR	5	$44.95	$224.75
TYPING INSTRUCTOR	5	$49.95	$249.75
FRIENDLY FILER	5	$49.95	$249.75
EASY GRAPH	5	$49.95	$249.75
HOMEWORD	5	$38.75	$193.75
APPLE AT WORK	5	FREE	$.00
COMPUTER LITERACY: INTRO	5	$49.95	$249.75
T.N.T.	5	$49.95	$249.75
FRIENDLY FILER	5	$49.95	$249.75
EASY GRAPH	5	$49.95	$249.75
MAGIC SLATE	5	$49.95	$249.75
TALKING WRITER	5	$49.95	$249.75
		TOTAL COST	$2,666.25

A FUNDING PROPOSAL FOR FY86 SUPPORTING
THE DEPARTMENT OF EXCEPTIONAL STUDENT EDUCATION
AND
THE DEPARTMENT OF INSTRUCTIONAL COMPUTING SERVICES

A proposal has been submitted to form a computer literacy summer writing team to modify the computer literacy unified curriculum for each of seven identified exceptional student populations. The team would also be responsible for identifying the minimal hardware/peripheral requirements necessary for each exceptionality to gain access to computer technology and appropriate software which will run with the recommended adaptive devices.

Computer labs are in place in every middle and high school in Palm Beach County. Computer labs are being placed in every elementary school during fiscal year 1985-86. For exceptional students to have appropriate access to these labs, modified curriculums are required.

It is timely to begin the computer literacy writing team so that appropriate identification of the needs of each exceptionality can be made before work on the curriculum itself begins.

It is proposed that a writing team composed of:

1 Teacher of the Specific Learning Disabilities
1 Teacher of the Visually Impaired
1 Teacher of the Physically Impaired
1 Teacher of the Mentally Handicapped
2 Resource teachers from the Department of ICS
1 Specialist from FDLRS
1 Specialist, Low Incidents
1 Specialist, Mentally Handicapped

meet once a week for twelve consecutive weeks, excluding the Spring Break, for 2 hours a session beginning the first week in March.. The four teachers will be contracted at $12/hours.

DRAFT

A FUNDING PROPOSAL FOR FY86
SUPPORTING THE DEPARTMENT OF
EXCEPTIONAL STUDENT EDUCATION

Meeting the mandated requirements of RAISE legislation has made revision of curriculum development priorities necessary. Exceptional Student Education courses leading to a Regular Diploma, Special Diploma or Special Certificate of Completion must be developed to meet district pupil progression and course credit requirements. Denial of access to these diploma options for exceptional students is in direct conflict with state and federal program requirements.

The Florida Department of Education has proposed Minimum Student Performance Standards for Computer Literacy. In anticipation of passage, the School Board of Palm Beach County created the Department of Instructional Computing Services and mandated the implementation of a computer literacy unified curriculum supported by computer labs at every school site. Writing teams are now needed to develop modifications of the computer literacy course offerings K-12 for the Physically Impaired (PI), Educable Mentally Handicapped (EMH), Trainable Mentally Handicapped (TMH), Profoundly Mentally Handicapped (PMH), Vision Impaired (VI), Hearing Impaired (HI), and Specific Learning Disabled (SLD). Course outlines would recommend minimal hardware peripheral devices and peripheral-specific software needed for identified handicapped populations to have access to existing school-based computer labs. Courses will be developed jointly by the Department of Instructional Computing Services and the Department of Exceptional Student Education. The efforts of the writing team will have widespread impact within both exceptional student education and regular education settings for many years to come.

The inservice training component of this package will enable the realization of three priorities established through a needs assessment conducted through the Florida Diagnostic and Learning Resources System (FDLRS).

1) Training to teachers in the use of the computer literacy curriculum.
2) Training to teachers in the use of specific adaptive peripheral devices appropriate for the population served.
3) Training to teachers in the selection of appropriate computer literacy curriculum materials.

Course development efforts will be initiated in March and will extend into the Summer of 1986. Field testing and revision of the curriculum will occur during the 1986-87 school term.

The writing team activities will not supplant the routine level of support offered through the Department of Instructional Computing Services or through the Department of Exceptional Student Education.

DRAFT

CRITERIA FOR THE SELECTION OF COMPUTER ADAPTIVE DEVICES FOR A SEVERELY HANDICAPPED STUDENT

It is significant that computer adaptive devices selected to assist a particular handicapped student **be the most effective and most appropriate** to **maximize cognitive development** while not causing physical discomfort, exhaustion or frustration.

To facilitate this process, student referrals will be made to the Communication Systems Evaluation Center (CSEC) when appropriate.

A copy of the Criteria and Procedures for a referral to the Communication Systems Evaluation Center is enclosed.

Criteria for Computer Adaptive Devices

1. Students who may benefit from specific computer adaptive devices and who do not meet the eligibility requirements for a CSEC evaluation

2. Students who may benefit from specific computer adaptive devices but a CSEC evaluation is not timely

3. Evaluation procedure will be monitored by a team that includes:

    a. Florida Diagnostic and Learning Resources System Diagnostic and Resources Specialist and Instructional Technology Specialist
    b. Physical Therapist
    c. Occupational Therapist
    d. Speech Teacher

with consultation from Warren Brown, FDLRS Associate Center, Sarasota, FL.

The following are <u>guidelines</u> to determine appropriate referrals:

1. The student must be in an Exceptional Student Education Program.

2. The evaluation procedure will not supplant services already available from CSEC.

3. The purpose of the evaluation procedure is to gather information required for the appropriate selection of a computer adaptive device that will facilitate access to the computer by a handicapped student.

4. The most appropriate device should be selected to maximize cognitive development while minimizing physical exertion, exhaustion or frustration.

5. Referrals should be made to the Florida Diagnostic and Learning Resources System using the Diagnostic and Resources Referral Form.

Florida Diagnostic and Learning Resources System
FDLRS/Alpha
7061 Garden Road
Riviera Beach, FL 33410
(305) 845-6009

From: Susan Keit, D&R Specialist
FDLRS/Alpha

Janeen Clinton, Instructional Technology Specialist
FDLRS/Alpha

Subject: Inservice Regarding Augmentative Communication Systems

The Communication Systems Evaluation Center (CSEC) in Orlando has been providing evaluations to Palm Beach County ESE students to determine the most effective augmentative communication system for them.

The number of students who need evaluations and augmentative communication systems is increasing. CSEC provides services to students throughout the state of Florida, therefore, it may take up to one year from the time students are referred before they actually receive the evaluation. In addition, CSEC referrals are limited to specific criteria for students with communication deficits. There are ESE students in Palm Beach County not eligible for CSEC services who would benefit from a procedure to evaluate the use of adaptive and augmentative devices.

We are recommending that selective ESE staff throughout the county receive additional training in augmentative communication systems. This would include ESE staff from each center who can, as a team, do evaluations and provide consultation. The purpose of this training is so that:

1) Local ESE staff could identify and implement alternative communication systems available in the county before the CSEC evaluation.

2) Local ESE staff could provide ongoing assistance in identifying and implementing strategies for integrating the augmentative system recommended by CSEC into the curriculum.

3) Local ESE staff could make informal recommendations regarding the need for purchasing communication systems for individual students or schools with ESE students.

We recommend inservice to provide hands-on experience with adaptive devices available for use with the Apple Computer. Additional training would include use of specific communication systems, new technology, and awareness of state resources.

We recommend the following ESE members to attend these inservice activities. We would also like to invite designated staff members from the Department of Instructional Computing Services and representatives from the Associaiton for Retarded Citizens and Rehabilitation Center Preschools. The ESE staffing members would include:

Program Specialist, Mental Retardation
Program Specialist, Low Incidence
ESE Center Administrators
ESE Center Psychologists
Physically Handicapped Teachers from each ESE Center
Speech Teachers from each ESE Center
Occupation Therapist
Physical Therapist

Florida Diagnostic and Learning Resources System
FDLRS/Alpha
7061 Garden Road
Riviera Beach, FL 33404
(305) 845-6009

COMPUTER HARDWARE ACCESS OBSERVATION

DRAFT

Date: _____

Student's name: _____
School: _____
Exceptionality: _____
Grade Level: _____ Cognitive Developmental Level _____
Date of Parent Permission: _____

Contact Person at School: _____
Contact Person's Title: _____

Check appropriate descriptor

AUDITORY PERCEPTION

responds to auditory stimuli
- conversational level
- discriminates sound from background

cannot make use of auditory stimuli

COMPREHENSION

can read & follow directions without assistance
- understands 1 step directions
- understands 2 step directions
- understands 3 step directions

must have directions read verbally

- understands & follows verbal directions
  - 1 step directions
  - 2 step directions
  - 3 step directions
- retains verbal directions
- needs constant assistance

can follow directions provided by a speech synthesizer

MOTOR SKILLS

DEVELOPMENTAL LEVEL

apedal (lies where placed)
rolls
sits unsupported when placed
sits supported
crawls
walks
tactile defensiveness

KEYBOARD ACCESS

bimanual typing skills (uses both hands for keyboarding)

can strike individual keys with 1 finger/T stick

hits two or more keys with one stroke

can make a clean hit on keys

causes rapid repeat of characters when striking keys

can strike two keys simultaneously (e.g. Control or Shift)

range of motion over the keyboard / enlarged keyboard

alternate method of striking keyboard (e.g. mouthstick)

endurance/stamina at keyboard

BODY MOVEMENT

ambulates independently/uses walker/wheelchair

has control of body movement

head control
holds head erect, mouth closed
throws head forward/backward/left/right

trunk control
holds trunk erect, head erect
body falls forward/left/right, thrusts backward

COGNITIVE MOVEMENT

upper extremity movements

purposeful

random

writhing movements

non purposeful

rigid

positioning and equipment presently used by student

has involuntary reflexes that interfere with computer access

strong startle

if arm straightens, does head push back

if arm bends, does head fall forward

if head turns one way, is there an arm response

others:

BODY POSITION AT THE COMPUTER

can sit comfortably at the computer

has to extend body or angle body to view screen/access input device

monitor must be moved into student's best visual field

VISUAL ATTENTION AND PERCEPTION

stays on task

occasionally distracted

easily distracted

needs consistant intervention to stay on task

identifies shapes regardless of orientation or size

can visually close an incomplete shape

has adequate visual acuity

moves eyes separate from/only with head

has adequate visual field to see entire screen

horizontal tracking

vertical tracking

scanning pattern

localizing

can read screen

- 10 column
- 20 column
- 40 column
- 80 column

needs simple video / text

can read a "busy" screen

stationary vs scrolling screen (speed of scroll)

VISUAL ATTENTION AND PERCEPTION

stays on task

occasionally distracted

easily distracted

needs consistant intervention to stay on task

identifies shapes regardless of orientation or size

can visually close an incomplete shape

has adequate visual acuity

moves eyes separate from/only with head

has adequate visual field to see entire screen

tracking side to side

tracking up and down

scanning pattern

- right to left
- left to right
- top to bottom
- bottom to top
- no organized pattern

localizing

- localizes items placed within visual field from outside visual field

can read screen

- 10 column
- 20 column
- 40 column
- 80 column

needs simple video / text

can read a "busy" screen

stationary vs scrolling screen (speed of scroll)

ADAPTIVE DEVICES

student requires no adaptive devices

student may benefit from:

- speech synthesis
- joy stick
- mouse
- enlarged keyboard
- keyguard
- key board membrane (drool guard)
- voice recognition
- adaptive firmware card
  - type of switch
  - size of switch
  - part of body used to activate
    - head mouth upper extremity trunk lower extremity
  - amount of pressure needed to activate
    - light
    - moderate
    - heavy
  - placement of switch
  - number of responses/time needed to activate
  - accuracy
  - endurance
- dysfunction of rapid repeat feature
- assistance with two key strokes
- braille output
- enlarged print output

Name and Title of Observers

_____

_____

_____

_____

Location of Observation

_____

Type of Computer Used for Observation

_____

Comments:

RECOMMENDED ESE COMPUTER HARDWARE

(Prices Effective November 1, 1985)*

Adaptive Device Interface, Model 101 for Apple IIe	$ 30.00
Adaptive Firmware Card for Apple IIe	$ 400.00
Apple IIe Color Classroom System	$1015.00
Apple Joystick	$ 41.97
Apple Mouse IIe	$ 104.30
Chatterbox, Voice Reading Ability Drill with IntroVoice I	$ 895.00**
Echo II+ Speech Synthesizer	$ 99.50
ImageWriter Printer with Accessory Kit and Card	$ 451.00
or	
ImageWriter II Printer with Accessory Kit and Card	$ 486.50
Keyboard Membrane for Apple IIe	$ 24.95
Keyguard Template	$ 15.00
Kleertex Template for Blind	$ 15.00
Muppet Keyboards with Software	$ 59.50
Switches (approximate cost each)	$ 35.00
Unicorn Touch Sensitive Keyboard	$ 295.00
Zenith RGB Large Screen Monitor	$ 729.00
Requires RGB Interface Card & Custom Cable	$ 175.00

*Amounts shown are LIST PRICE. Some distributors offer discounts to educational institutions. Prices do NOT include shipping costs.

**Voice recognition is one of the most expensive adaptive technologies. Student populations should be accessed carefully before purchasing.

ADAPTIVE DEVICE INTERFACE, MODEL 100 FOR USE WITH APPLE IIe

Caffelle Marketing — $25.00
5336 Winewood Drive
Sarasota, FL 33582

Interface box is attached to the side of the Apple IIe so that one of a variety of switches can be employed by an individual with limited motor capability. (Can be used independently with specifically designed software BUT RECOMMENDED USE WITH ADAPTIVE FIRMWARE CARD.) Use with PI populations.

ADAPTIVE FIRMWARE CARD FOR APPLE IIe

Adaptive Peripherals — $400.00
4529 Batley Avenue
Seattle, WA 98103

or Software Support Company Inc.
Henry A. Tenenbaum Ph.D.
937 Unit E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

A transparent interface card that allows ANY commercial or public domain software to be adapted for scanning and switch input. Requires a control interface such as a switch or Unicorn Keyboard. Use with PI populations.

APPLE IIe COLOR CLASSROOM SYSTEM

A-2P2097 — $1015.00
Apple Corporation School System Bid Price

Includes IIe enhanced CPU, Unidisk disk drive with controller, extended 80 column text card, new color monitor IIe, 128k RAM, and ProDOS users kit.

APPLE JOYSTICKS

A2M2002 — $41.97
Apple Corporation School System Bid Price

Stick device that manipulated the cursor on the screen.

APPLE MOUSE IIe

A2M2050 $104.30
Apple Corporation School System Bid Price

Square device that can be rolled around on a desk top to manipulated the cursor on the screen.

CHATTERBOX, VOICE READING ABILITY DRILL WITH INTROVOICE II

Voice Learning Systems $895.00
29 Elk Ridge Lane
Dept. B
Boulder, CO 80302
1-800-531-5314

or available from
Florida Micro Media
521 S.E. 18th Avenue
Pompano Beach, FL 33060
1-800-553-4300
(305) 941-1127

or Software Support Company Inc.
Henry A. Tenenbaum Ph. D.
937 Unit E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

Chatterbox includes 12 disk sides, headset and microphone and complete documentation to "train" voice output. MUST BE USED WITH A SPEECH SYNTHESIZER. (Requires Echo Speech Snythesizer and IntroVoice II to operate.) Use with PI and Speech Impaired populations.

ECHO II+ SPEECH SYNTHESIZER

Street Electronics Corp. $99.50
3152 E. LaPalma Avenue, Suite C
Anaheim, CA 92806

or Software Support Company Inc.
Henry A. Tenenbaum, Ph. D.
937 Unit E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

Speech synthesis peripherals allow sounds to be produced when text is presented on the monitor. Provides auditory reinforcement to the visual representation on the monitor. Use with VI, Blind, Speech Impaired, Mentally Handicapped and LD populations.

IMAGEWRITER PRINTER WITH ACCESSORY KIT AND INTERFACE CARD FOR THE APPLE IIe

A2P2034 $ 451.00
Apple Computer Corporation School System Bid Price
(704) 525-8120

Dot matrix printer with graphics capability.

IMAGEWRITER II PRINTER WITH ACCESSORY KIT AND INTERFACE CARD FOR THE APPLE IIe

A2P2108 $ 486.50
Apple Computer Corporation School System Bid Price
(704) 525-8120

Dot matrix printer with the additional capability of printing color text and graphics by interchanging color ribbons.

KEYBOARD MEMBRANE FOR APPLE IIe

Lyben Computer Systems $ 24.95
1250 E. Rankin Drive
Troy, MI 48083
(313) 589-3440

Don Johnston Developmental Equipment
900 Winnetka Terrace
Lake Zurich, IL 60047
(312) 438-3476

A protective safe-skin that covers the keyboard and prevents damage to the computer from liquids. Use with students who have drooling problems.

KEYGUARD TEMPLATE

Adaptive Technology, Inc. $ 15.00
5334 72nd Circle North
Brooklyn Center, MN 55429

Don Johnston Developmental Equipment
900 Winnetka Terrace
Lake Zurich, IL 60047
(312) 438-3476

Has three formats: dust cover with no keys exposed; custom formats with selected keys exposed for use; and full formats with all keys accessible for use. Key Shields are mounted and removed with Velcro. For an additional fee, a KEYLOCK can be ordered to hold down ESC, SHIFT or CONTROL keys for single input control by hand or pointer. (SPECIFY MAKE AND MODEL OF COMPUTER.) Use with PI students who have difficulty with fine motor coordination.

KLEERTEX TEMPLATE FOR THE BLIND

Speech Enterprises $15.00
10622 Fairlane Drive
Houston, TX 77024

Keyboard overlay with template, brailler and felt tip pen. Use with blind students to facilitate access to the computer.

MUPPET KEYBOARD WITH SOFTWARE

available from:
Software Support Company Inc. $59.50
Henry A. Tenenbaum
937 Unite E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

A colorful, enlarged keyboard that plugs into the Apple game port. Use with young children, developmentally delayed children, PMH and TMH populations.

SWITCHES

Zygo Industries
P O Box 1008
Portland, OR 97207
(503) 297-1724

Don Johnston Developmental Equipment
900 Winnetka Terrace
Lake Zurich, IL 60047
(312) 438-3476

A sample switch kit can be purchased from Zygo Industries for $375.00. These sample kits are available from each FDLRS Center for evaluation purposes. Individual switches start at approximately $35.00 and go up in price.

UNICORN TOUCH SENSITIVE KEYBOARD WITH CABLE

available from
Software Support Company $295.00
Henry A. Tenenbaum, Ph.D.
937 Unit E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

Touch sensitive, oversized keyboard that can be programmed. REQUIRES AN ADAPTIVE FIRMWARE CARD. Use with young children, Mentally Handicapped and PI.

ZENITH RGB LARGE SCREEN MONITOR

available from
Heathkit Company $729.00
Jacksonville, FL

or local Zenith Dealer

A 25" monitor that has controls to turn off the red and blue colors for word processing. Use with VI populations.

128K EXTENDED MEMORY WITH 80 COLUMN CARD

Software Support Company Inc. $84.50
Henry A. Tenenbaum Ph. D.
937 Unit E Meadowview Drive
Port Orange, FL 32019
(904) 761-1153

It is necessary to upgrade the Apple IIe for some peripheral devices. These include the Echo II+ and Chatterbox.

FLORIDA INSTRUCTIONAL TECHNOLOGY RESOURCE CENTERS

November 1985

COMMUNICATION SYSTEMS EVALUATION CENTER (CSEC)

Contact: Mrs. Sandra Osborn, Supervisor
Communication Systems Evaluation Center
1600 Silver Star Road
Orlando, FL 32804

(305) 293-0473

SpecialNet: CSEC

To assist non-vocal or unintelligible students, ages three through twenty-one, in the development of effective communications through the use of appropriate augmentative systems and devices.

COMPUTER ASSISTED INSTRUCTION AND SUPPORT FOR THE HANDICAPPED (CAISH)

Contact: Mr. Warren Brown, Project Manager
Project CAISH
2749 Siesta Drive
Sarasota, FL 333579

(813) 953-5000, Ext. 287

SpecialNet: FDLRS.CAISH

To explore the use of computers for instructional purposes, emphasizing the needs of students being served in low incidence or multiply handicapped program areas.

COMPUTER RESOURCE CENTER (CRC)

Contact: Mr. John Mark Leach, Computer Resource Specialist
Computer Resource Center
Florida School for the Deaf and the Blind
207 North San Marco Avenue
St. Augustine, FL 32804

(904) 824-1654

SpecialNet: TVCFDLRS

To enhance instruction for deaf students and blind students through the use of computer assisted instruction.

FLORIDA CENTER FOR INSTRUCTIONAL COMPUTING - FCIC

Contact: Florida Center for Instructional Computing
College of Education
University of South Florida
Tampa, FL 33620
(813) 974-3470

A self-supporting, non-profit Center dedicated to providing education, information, and services related to administrative, instructional and recreational computing.

FDLRS/TECH - CENTRALIZED RESOURCE CENTER AND COORDINATING UNIT FOR INSTRUCTIONAL TECHNOLOGY APPLICATIONS IN EXCEPTIONAL STUDENT EDUCATION

Contact: Mrs. Eileen Pracek, Project Coordinator
FDLRS/Tech
1450 Martin Blvd.
Merritt Island, FL 32952

(305) 631-1911

SpecialNet: FDLRS.TECH

To assist in the implementation of effective applications of instructional technology in exceptional student education programs through the statewide coordination of local Instructional Technology Services project activities, and the establishment of a statewide resource center.

FLORIDA INSTRUCTIONAL MATERIALS CENTER FOR THE VISUALLY HANDICAPPED (FIMC/VH)

Contact: Mr. Paul J. Lewis, Supervisor
Florida Instructional Materials Center
for the Visually Handicapped
5002 N. Lois Avenue
Tampa, FL 33614

(813) 876-5016
(800) 282-9193

SpecialNet: FIMCVH

To improve educational services delivery to visually impaired and other exceptional students in Florida.

SOUTH ATLANTIC REGIONAL RESOURCE CENTER (SARRC)

Contact: Mr. Timothy Kelly, Director
South Atlantic RRC
Florida Atlantic University
1236 North University Drive
Plantation, FL 33322

To provide technical assistance, consultation, and training to state education agencies in all areas related to the implementation of P.L. 94-142.

UCF/DOE INSTRUCTIONAL COMPUTING CENTER

Contact: Donna Toler Baumbach
UCF/DOE Instructional Computing Center
University of Central Florida
Department of Educational Services
Orlando, FL 32816

Maintains a collection of scopes and sequences of computer literacy curriculua from throughout Florida and the United States and reviews commercially produced materials which are available in the area of computer literacy.

APPLIED TECHNOLOGY RESOURCE MATERIALS LIST

The following materials are available at each of the 18 FDLRS Associate Centers. Most of the materials were provided to the Centers in conjunction with the Summer Institute on Applied Technology for Physically/Visually Impaired held in Merritt Island, August 6-9, 1985.

Contact your local FDLRS Center to review the material.

APPLIED TECHNOLOGY FOR PHYSICALLY/VISUALLY IMPAIRED: SUMMER INSTITUTE NOTEBOOK. (Includes selected journal articles and bibliographies from the resource listing.)

ALTERNATIVE COMMUNICATION SYSTEMS FOR NON-VOCAL STUDENTS, VOLUME III-E, 1982. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

CLOSING THE GAP: COMPUTERS FOR THE HANDICAPPED Journal publication.

COMPUTER ASSISTED INSTRUCTION AND SUPPORT FOR THE HANDICAPPED: INTERIM REPORT, VOLUME III-I. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

COMPUTER ASSISTED INSTRUCTION AND SUPPORT FOR THE HANDICAPPED: FINAL REPORT, VOLUME III-I. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

COMPUTER ASSISTED INSTRUCTION AND SUPPORT FOR THE HANDICAPPED: TRAINING PACKAGE, VOLUME III-I. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

COMPUTER EQUIPMENT AND AIDS FOR THE BLIND AND VISUALLY IMPAIRED. Baruch College, Computer Center for the Visually Impaired, 17 Lexington Avenue, Box 515, New York, NY 10010.

COMPUTER TECHNOLOGY FOR THE HANDICAPPED IN SPECIAL EDUCATION AND REHABILITATION: A RESOURCE GUIDE. 1983. By Gary Nave, Philip Browning and Jeri Carter. International Council for Computers in Education, 135 Education, University of Oregon, Eugene, OR 97403.

COMPUTER TECHNOLOGY FOR THE HANDICAPPED. THE PROCEEDINGS OF THE 1984 CLOSING THE GAP CONFERENCE, 1985. By Michael Gergen and Dolores Hagen. Closing the Gap, P O Box 68, Henderson, MN 56044.

COMPUTERS, EDUCATION AND SPECIAL NEEDS. 1984. By E. Paul Goldenberg, Susan Jo Russell and Cynthia J. Carter. Addison-Wesley Publishing Company Inc., Jacob Way, Reading, MA 01867.

DEVELOPMENTAL PHYSICAL MANAGEMENT FOR THE MULTI-DISABLED CHILD. By Beverly Buttram and Glenna Brown. University of Alabama, Area of Special Education, P O Box 2592, University, AL 35486.

DIRECTORY OF SERVICES AND SPECIALIZED EQUIPMENT FOR THE PHYSICALLY IMPAIRED. IBM-NAD, Monroe Towers, 8th Floor, 101 N. Monroe Street, Tallahassee, FL 32301.

EDUCATIONAL SOFTWARE DIRECTORY FOR THE IBM PERSONAL COMPUTERS, Winter/Spring 1985. Electronic Communications, Inc. Suite 220, 1311 Executive Center Drive, Tallahassee, FL 32301.

ELECTRONIC COMMUNICATION DEVICES FOR VISUALLY IMPAIRED STUDENTS, VOLUME III-F, 1982. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

ELECTRONIC COMMUNICATION DEVICES FOR VISUALLY IMPAIRED STUDENTS, 1982. PART 2: COMPUTER ACCESSIBILITY FOR THE VISUALLY IMPAIRED, VOLUME III-F, June 1983. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

GUIDE TO LEARNING. IBM-NAD, Monroe Towers, 8th Floor, 101 N. Monroe Street, Tallahassee, FL 32301.

HANDBOOK OF MICROCOMPUTER APPLICATIONS IN COMMUNICATION DISORDERS, 1984. Edited by Arthur H. Schwartz. College-Hill Press, Inc. 4284 41st Street, San Diego, CA 92105.

HANDBOOK OF MICROCOMPUTERS IN SPECIAL EDUCATION, 1984. By Michael Behrmann. College-Hill Press, Inc., 4284 41st Street, San Diego, CA 92105.

MICROCOMPUTERS IN EDUCATION - SPECIAL ISSUE: THE TOP 50 EDUCATIONAL SOFTWARE PUBLISHERS - 1984. John Mongillo, 2537 Post Road, Darien, CT 06820.

MICROCOMPUTERS IN SPECIAL EDUCATION. 1983. By Florence M. Taber. The Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091-1589.

MICROCOMPUTERS IN THE SCHOOLS - IMPLEMENTATION IN SPECIAL EDUCATION: CASE STUDY REPORT. 1983. SRA Technologies, 901 S. Highland Street, Arlington, VA 22204.

NON-VOCAL COMMUNICATION RESOURCE BOOK, 1985 Revised Edition. University of Wisconsin, TRACE Center, 314 Waisman Center, 1500 Highland Avenue, Madison, WI 53706.

ONLY THE BEST: THE DISCRIMINATING SOFTWARE GUIDE FOR PRESCHOOL-GRADE 12. 1985. By Linda L. Mattas. Education News Service, 926 J Street, Suite 212, Sacramento, CA 95814.

PERSONAL COMPUTERS AND SPECIAL NEEDS, 1984. By Frank G. Bowe. SYBEX Inc., 2344 Sixth Street, Berkeley, CA 94710.

PERSONAL COMPUTERS AND THE DISABLED, 1984. By Peter A. McWilliams. Double-Day Publishing Company, 501 Franklin Avenue, Garden City, NY 11530.

PROCEDURES FOR AN INTERDISCIPLINARY EVALUATION OF NONORAL STUDENTS, VOLUME III-M, April 1985. Bureau of Education for Exceptional Students, State of Florida, Department of Education, Knott Building, Tallahassee, FL 32301.

RESOURCE LIST: COMPUTERS AND VISUALLY IMPAIRED PERSONS, June 23, 1985. The Berthold Lowenfeld Seminar, AER Southwest Regional Convention.

SECOND BEGINNER'S GUIDE TO PERSONAL COMPUTERS FOR THE BLIND AND VISUALLY IMPAIRED. By The National Braille Press Inc., Brookline Books, P O Box 1046, 460 Broadway, Cambridge, MA 02238.

SPECIAL TECHNOLOGY FOR SPECIAL CHILDREN: COMPUTERS TO SERVE COMMUNICATION AND AUTONOMY IN THE EDUCATION OF HANDICAPPED CHILDREN, 1979. By E. Paul Goldenberg. Pro-Ed, 5341 Industrial Oak Blvd., Austin, TX 78735.

TECHNOLOGY AIDS AND INFORMATION RESOURCE GUIDE. Edited by Rick Lupacchino. State of Florida, Department of Health and Rehabilitative Services, Developmental Services Program Office and Florida Developmental Disabilities Planning Council, 1317 Winewood Blvd., Building 5, Room 210, Tallahassee, FL 32301.

TECHNOLOGY FOR INDEPENDENT LIVING, 1983. Compiled and edited by Sandi Enders. Rehabilitation Engineering Society of North America, 1101 Connecticut Avenue, Northwest, Suite 700, Washington D. C. 20036.

TESS, THE EDUCATIONAL SOFTWARE SELECTOR. EPIE Institute and Teachers College Press, 1985.

101 ACTIVITIES FOR COMPUTER CLASSES. Minnesota Educational Computing Consortium, 1983.

100 EXCEPTIONAL IDEAS FOR INTEGRATING COMPUTERS IN THE CLASSROOM. 1985. Edited by Razia Pullen. Florida Diagnostic and Learning Resources System Instructional Technology Network.

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By Timothy Crowner
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Guide to Software for Special Education
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A Hard Look at Software in Computer-Assisted Instruction in Special Education
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Individualizing Instruction with Microcomputer
By Louise S. Appell and Kathleen M. Hurley
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Intellectual Prosthesis: Reality or Dream for the Severely/Profoundly Retarded Person
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Microcomputer Assisted Instruction. Effective Use of Software for Special Needs Students
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A Model Program in Microcomputer Utilization with Handicapped Students. Final Performance Report.
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Microcomputer Applications for the Learning Disabled: Managing Instructional Materials. Part One.
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Learning Disabilities: An Interdisciplinary Journal, V2, July 1983.
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Special Educators' Perceptions of Priorities for Computer Use
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Using Microcomputers to Meet the Learning Needs of Special Education Students
By DeForest L. Strunk
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Using Technology to Teach Writing and Reading Skills
By R. Wilburn Clouse
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ED249726

The guide to special education technology was produced by the SECTOR Project and the San Mateo County Office of Education, Special Education Division, 333 Main Street, Redwood City, CA 94063. Inclusion of products in this guide does not constitute an endorsement.

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The SECTOR Project is funded by the Utah State Office of Education--Special Education Section and is located at the Developmental Center for Handicapped Persons, Utah State University, Logan, Utah.

Table of Contents

Organizations, Associations, and Government Agencies.....2

Producers of Software and Dedicated Hardware.....8

- Communications Impaired.....9
- Visually Impaired.....13
- Hearing Impaired.....16
- Physically Handicapped.....17
- Robotics.....19
- Specialized Input Devices.....20

Management Software.....22

- Administrative Software.....23
- IEP Management.....25
- Computer Assisted Testing.....28
- Computer Managed Instruction.....30

Adaptive Device Vendors.....32

Publications and Directories.....34

Periodical and Journals.....37

Networks.....41

Software Evaluation Sources.....44

Organizations, Associations, and Government Agencies

ORGANIZATIONS, ASSOCIATIONS, AND GOVERNMENT AGENCIES

ABLEDATA, National Rehabilitation Information Center, 4407 Eighth Street, N.E., The Catholic University of America, Washington, DC 20017, (202) 635-5326. Product information for commercially available rehabilitation aids and equipment.

Artificial Language Laboratory, Michigan State University, Computer Science Department, East Lansing, MI 48824. Involved in basic research in the field of computer processing and formal linguistic structure.

Association of Rehabilitation Programs in Data Processing, Philadelphia Hardware Training Center, 4025 Chestnut Street, 3rd Floor, Philadelphia, PA 19104. Jim Vagnoni, Communication Committee Chairman. Information for the national federation of programs for training the handicapped for data processing.

Association for Special Education Technology (ASET), P.O. Box 152, Allen, TX 75002. A national affiliate of the Association for Educational Communication and Technology established to bring together disciplines sharing a common interest in improving the use of technology in special education, to identify and publicize unique instructional needs of special education students, and to promote improved federal legislation for technology in special education.

Association for the Development of Computer-Based Instructional Systems (ADCIS), Miller Hall 409, Western Washington University, Bellingham, WA 98225. An international not-for-profit association for professionals in the field of instructional technology.

BIPED Corporation, Business Information Processing Education for the Disabled, 26 Palmer's Hill Road, Stamford, CT 06902, (203) 324-3935. Non-profit educational program to promote computer programming and related informational processing skills for the disabled.

Center for Computer Assistance to the Disabled, P.O. Box 314, Hurst, TX 76053. Independent, non-profit organization provides a location where disabled persons can gain assistance with the application of microcomputers.

Children's Hospital at Stanford. Rehabilitation Engineeering Center, 520 Willow Road, Palo Alto, CA 94304, (415) 327-4800. Contact: Peggy Barker, Rehabilitation Engineer, Head, communication/control service. This center provides services and research for handicapped individuals that allow them to interact with their immediate environment using assistive devices.

Computer-Using Educators (CUE), P.O. Box 18547, San Jose, CA 95158. Organization committed to expanding the use of computer technology in education.

Council for Exceptional Children (CEC), 1920 Association Drive, Reston, VA 22091, (703) 620-3660. Provides information on special education teachers' needs. Also publishes Exceptional Children Journal six times yearly (subscription $25; single copies $5). October 1982 issue focuses on microcomputers and special education.

The Council for Exceptional Children (CEC), Technology and Media (TAM), Dr. Charles McArthur, Membership Chairperson, University of Maryland, Institute of Exceptional Children and Youth, College Park, MD 20742. An international association of special education professionals interested in technology and media.

HCCCP Project, Education Department, Special Education Programs (SEP), 400 Maryland Avenue, S.W., Washington, DC 20202, (202) 472-3394. Attn: James Johnson, DONO 4829. Funds programs to link developers of special education courseware with commercial publishers and to aid in national distribution of products. Lists of software and hardware for handicapped available.

International Council for Computers in Education (ICCE), 135 Education, University of Oregon, Eugene, OR 97403. A non-profit corporation dedicated to improved instructional use of computers. It publishes The Computing Teacher as well as several booklets including "Learning Disabled Students and Computers: A Teacher's Guidebook ($2.50).

IEEE Computer Society, P.O. Box 80452, Worldway Postal Center, Los Angeles, CA 90080. Published proceedings of John Hopkins First National Search for Applications of Personal Computing to Aid the Handicapped.

LIFT, Inc., 350 Pfingsten, Suite 103, Northbrook, IL 60062, (312) 564-9004. Non-profit contract programming company which identifies, trains and hires the physically handicapped for major corporations.

LINC Resources, Inc., Suite 225, 1875 Morse Road, Columbus, OH 43229, (614) 263-5462. A non-profit corporation that arranges commercial publication and distribution of educational products as well as other special education materials. Also publishes UPDATE, a newsletter that reports on new special education products, including software (9 times yearly, free).

Market Linkage Project for Special Education, LINC Resources, Inc., 3857 North High Street, Suite 225, Columbus, OH 43214. Offers product developers assistance in understanding how to develop educational products to meet national distribution standards and to assure that these products are available in the classroom.

Michigan Association for Computer Users in Learning (MACUL), P.O. Box 628, Westland, MI 48185. An organization of Michigan educators that coordinates instructional computing activities throughout the state and sponsors a yearly conference.

Microcomputer Education Applications Network (MEAN), a Division of Education TURNKEY Systems, 256 North Washington Street, Falls Church, VA 22046, (703) 536-2310. Contact: Alfred Morin. Provides general information about the special education high-technology field, including microcomputer developments in special education, new product announcements, evaluations of courseware and funding sources for development efforts. Also develops custom software for special education administrators.

Microcomputers in the Schools--Applications in Special Education, SRA Corporation, 901 South Highland Street, Arlington, VA 22004. Analyzes the experiences of local schools currently using microcomputers with programs for the handicapped and then develops and disseminates useful, research-based information to assist administrators and educators in introducing microcomputers in special education programs.

MicroSIFT, Northwest Regional Educational Laboratory, 300 S.W. Sixth Avenue, Portland, OR 97204. A clearinghouse for descriptive and evaluative information about microcomputer instructional software and teacher information.

Minnesota Educational Computing Consortium (MECC), 2520 Broadway Drive, St. Paul, MN 55113, (612) 376-1118. Catalog available. MECC offers services to teachers and administrators as well as offering in-service training and curriculum guides. It is a good source for software and written materials for Apple II and Atari.

National Association of State Directors of Special Education (NASDSE), Suite 404, 1201 16th Street, N.W., Washington, DC 20036, (202) 822-7933. Contact SpecialNet Staff. Up-to-date information concerning special education appropriation levels, regulatory changes and new devices is maintained in SpecialNet. Available to anyone who has access to a computer terminal or microcomputer.

National Center for Research in Vocational Education, 1960 Kenny Road, Columbus, OH 43210. Provides materials on various aspects of career and vocational education, including programs for special needs populations.

National Easter Seal Society (NESS), 2023 West Ogden Avenue, Chicago, IL 60612, (312) 243-8400. Dedicated to establishing and maintaining programs for handicapped individuals, working with other agencies to provide support services, and disseminating pertinent information.

Project CAISH, Gocio Elementary, 3450 Gocio Road, Sarasota, FL 33580. Resource manual for the development and evaluation of special programs for exceptional students.

Project EduTech, JWK International Corporation, 7617 Little River Turnpike, Annandale, VA 22003. Designed to provide technical assistance to state and local education agencies in the appropriate use of technology in special education.

Sensory Aids Foundation, 399 Sherman Avenue, Suite 12, Palo Alto, CA 94306. Non-profit organization offering training, placement and consulting services on adapting work environments and applying technology to assist disabled people.

Special Education Software Center, SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025, (800) 223-2711. Provides technical assistance to developers of special education programs, provides an information base of software available for special education instruction and administration, and holds an annual software conference to link developers, educators, students, parents, and others involved in special education.

TECC (Teacher Education Computer Center), Santa Clara County Office of Education, 100 Skyport Drive, MC 237, San Jose, CA 95115, (408) 947-6992. Contact: Ivan Rose. A state-wide staff development program to provide resources to teachers, administrators, other school personnel and other persons providing services to schools. Resources will be provided in all areas of curriculum, but especially in math, science and technology. Regional centers offer classes that include training in the use of computers with special education populations.

TERC (Technical Education Research Centers, Inc.), 8 Eliot Street, Cambridge, MA 02138, (617) 547-3890. TERC provides information about computer use for both regular and special education teachers. A resource list concerning computer use in special education is available, as is Hands On, a free newsletter.

Trace Research and Development Center for the Severely Communicatively Handicapped, University of Wisconsin, 314 Waisman Center, 1500 Highland Avenue, Madison, WI 53705, (608) 262-6966. Contact the Trace Reprint Service for a list of pertinent publications and the center's many services.

United Cerebral Palsy, 7 Community Drive, Buffalo, NY 14225. List of software recommendations for the handicapped available.

Vocational Studies Center, University of Wisconsin-Madison, 964 Educational Science Building, 1025 West Johnson Street, Madison, WI 53706, (608) 263-3415. A research and development center for vocational education, career development, education and training programs, and adult occupational education.

Western Center for Microcomputers in Special Education, Inc., 1259 El Camino Real, Suite 275, Menlo Park, CA 94025, (415) 326-6997. A non-profit corporation to assist in the effective acquisition and utilization of microcomputers in specialized systems and to share the expertise that has resulted from solving numerous interfacing and operating problems.

The Young People's LOGO Association (YPLA), 1208 Hillsdale Drive, Richardson, TX 75081. An independent, non-profit national computer club specializing in LOGO which is run for and by young people.

Producers of Software and Dedicated Hardware

PRODUCERS OF SOFTWARE AND DEDICATED HARDWARE

Communications Impaired

Adaptive Communication Systems, Inc., Box 12440, Pittsburgh, PA 15231, (412) 264-2288. Manufacturers of SpeechPac and Alltalk communications devices for physically impaired, which utilize speech synthesis and alternate input for physically handicapped. Software for handicapped is also available.

Adaptive Peripherals, 4529 Bagley Avenue N., Seattle, VA 98103, (206) 633-2610. Manufacturers of the Adaptive Firmware Card which allows user with physical disabilities to run off-the-shelf software for the Apple II+ and IIe through use of single ability switch.

Arctec Systems, 9104 Red Branch Road, Columbia, MD 21045, (310) 730-1237. Manufacturer of MICRO-EAR voice command system which allows voice control of Apple and IBM microcomputers and also has speech therapy potential.

Artic Technologies, 2234 Star Court, Auburn Heights, MI 48057, (313) 852-8344. Manufacturers of SymPhonix series of speech synthesizers and support software.

Audiobionics, 9913 Valley View Road, Eden Prairie, MN 55344, (612) 941-5464. Manufacturers of the Personal Communicator a device which can be used as a communications aid or as a telecommunications device for the deaf.

Audiosoft, Harry R. Zimmerman, CCC-A, 1455 Wofford Drive, Las Cruces, NM 88001, (505) 522-6444. Manufacturers of CAPS, the simulator available for teaching pure tone audiometry.

Jostens Learning Systems, 800 East Business Center Drive, Mt. Prospect, IL 60056, (800) 323-7577. Manufacturers of the Ufonic speech synthesizer and support software for Apple.

Communication Skill Builders, 3130 North Dodge Boulevard, P.O. Box 42050, Tucson, AZ 85733, (602) 323-7500. Planning Individualized Speech and Language Intervention Programs which supplements a book by the same name and can be used for developing IEPs based on the book's objectives. The teacher or clinician chooses the appropriate objectives for the child and can then print them out for use in the IEP.

Communicology Associates, 640 16th Street, Gulfport, MS 39501. Makers of the Computer Managed Articulation Therapy program for management of speech treatment programs and the Computer Managed Screening Test for communication disorder screening.

Dialogic Corporation, 164 McKinley Avenue, East Hanover, NJ 07936, (201) 386-0202. Manufacturer of the DIALOG Voice System, which allows digital storage and playback of voice.

Don't Ask Computer Software, 2265 Westwoodd boulevard, Suite B-150, Los Angeles, CA 90064, (213) 397-8811. Makers of the Software Automatic Mouth, a speech synthesizer created entirely in software.

Dunamis, Inc., 3423 Fowler Boulevard, Lawrenceville, GA 30245, (404) 923-3202. Manufacturers of PowerPad keyboard and SpeechPad communications aid.

Grover & Associates (The Microcommunicator), Creekside Center, Suite D116, #7 Mt. Lassen Drive, San Rafael, CA 94903, (415) 479-5906. Computer programs which transform the Apple II+ into communications devices for the physically disabled.

Innocomp, 33195 Wagon Wheel Drive, Solon, OH 44f139, (216) 673-6026. Makers of Say-It-All speech communication aid, and CACTU computer assisted communication therapy sessions program.

Intex Micro Systems Corporation, 725 South Adams road, Birmingham, MI 48011, (313) 540-7601. Makers of SpeechAid, a portable communication aid.

Lingquest Software, Inc., 3349 Beard Road, Napa, CA 94558, (707) 257-2505. Provides computer programs for speech/language pathology applications.

Micro Video, 314 North First Street, P.O. Box 7357, Ann Arbor, MI 48107, (313) 996-0626. Makers of VideoVoice speech training system for hearing impaired. vocal disorders, and English as second language.

Midland Micro Magic, R.R. #2, Box 291-A, Murphysboro, IL 62966. Software programs that provide the communicative disorders specialist with diagnostic report writing, as well as a therapy planning program.

Parrot Software, 190 Sandy Ridge Road, State College, PA 16803, (814) 237-7282. Software programs available for speech, language, or hearing impaired.

Phonic Ear, In., 250 Camino Alto, Mill Valley, CA 94941-1490, (415) 383-4000. Makers of the Vois series of communications aids. The company offers a 2-week evaluation program, 1 month rental program, and month-to-month rental program to help customers decide appropriateness of products.

Prentke Romich Company, 1022 Heyl Rd., Wooster, OH 44691, (216) 262-1984. Company that produces many products that access computers for the severely handicapped. Send for free brochure/catalog on Expressive Communication Aids.

Shea Products, In., 2355 Avon Industrial Drive, Auburn Hills, MI 48057, (313) 852-21163. Makers of the Special Friend speech prosthesis communication device.

Sliwa Enterprises, Inc., 2360-J George Washington Highway, Yorktown, VA 23692, (804) 898-8386. Manufactureer of talking products for the Echo and Cricket Voice Synthesizers by Street Electronics.

Software Research Corporation, 3939 Quadra Street, Victoria, B.C., Canada V8X 1 J5, (604) 727-3744. Makers of the Visible Speech Aid, a speech training device for profoundly deaf children.

Street Electronics, 11410 Mark Avenue, Carpenteria, CA 93103. Makers of the Echo II Speech Synthesizer; a low-cost ($150), easy-to-use device that is quite useful with other commercial programs.

Sweet Micro Systems, 150 Chestnut Street, Providence, RI 02903, (401) 273-5333. Maker of the Mockingboard speech sysnthesizer.

Syntalk Systems & Services, 375 South Mayfair Avenue, Suite 225, Daly City, CA 94015, (415) 991-7133. Makers of Prompt-Writer--a writing system designed for visually handicapped and others, using voice output.

Technical Aids to Independence, Inc., 12 Hyde Road, Bloomfield, NJ 07003, (201) 338-8826. Family of communicatory and control aids for physically/neurologically impaired.

Votrax, 500 Stephenson Highway, Troy, MI 48084, (800) 521-1350. Manufacturer of the Votrax Personal Speech System voice synthesizer.

Western Research Foundation, Suite 322, U District Building, 12107 N.E. 45th Street, Seattle, WA 98105, (206) 633-3569. Alternative communication system software, information on what software is available, prices, brief description and technical information provided.

Words+ Inc., 622 South Fair Oaks Avenue, Sunnyvale, CA 94086, (408) 730-9588. Supplies communications and home control devices for the handicapped using specialized input and output.

Zygo Industries, Inc., P.O. Box 1008, Portland, OR 97207-1008, (503) 297-1724. Makers of a wide range of communication aids and assistive devices. Reguest catalog of communication systems and assistive devices.

Visually Impaired

Apollo Electronic Visual Aids, 20932 Lassen Street, Chatsworth, CA 91311, (800) 272-8083. Makers of enlarged print viewing systems for the partially sighted.

Artic Technologies, 2234 Star Court, Auburn Heights, MI 48057, (313) 852-8344. Manufacturers of SymPhonix series of speech synthesizers and support software.

ARTS Computer Products, Inc., 145 Tremont Street, Suite 407, Boston, MA 02111, (617) 482-8248. Makers of PC LENS which enlarges IBM PC screen and the PC Voice speech synthesizer.

Jostens Learning Systems, 800 East Business Center Drive, Mt. Prospect, IL, 60056, (800) 323-7577. Manufacturers of the Ufonic speech synthesizer and support software for Apple.

Bossert Specialties Company, P.O. Box 15441, Phoenix, AZ 85060, (602) 956-6637. Makers of Cybertalker 2 speech synthesizer and other aids and devices to help the visually impaired. Catalog available.

Ciderware, 104 North St. Mary, Dallas, TX 75214-5199, (214) 824-1490. Makers of talking software for the blind and the general public.

Computalker Consultants, P.O. Box 1951, Santa Monica, CA 90406, (213) 392-5230. Makers of the Computalker CT-1 speech synthesizer.

Don't Ask Computer Software, 2265 Westwood Boulevard, Suite B-150, Los Angeles, CA 90064, (213) 397-8811. Makers of the Software Automatic Mouth, a speech synthesizer created entirely in software.

Foley's Low Vision Aids, 1357 East David Road, Kettering, OH 45429, (513) 294-2433. Maker of talking software (using the ECHO II) for blind users, with audio review capabilities.

Helen Keller National Center, 111 Middle Neck Road, Sands Point, NY 11050, (516) 944-8900. Makers of Tactile Communicator which links to a smoke detector and/or a Baby Cry Signaler for deaf-blind population.

Heuristics, Inc., 1285 Hammerwood Avenue, Sunnyvale, CA 94086, (408) 734-8532. Makers of SpeechLink speech recognition.device which allows voice control of computer.

Interstate Elecctronics Corporation, 1001 East Ball Road, P.O. Box 3117, Anaheim, CA 92803, (714) 635-7210. Makers of voice recognition products.

Maryland Computer Services, Inc., 2010 Rock Spring road, Forest Hill, MD 20150, (301) 879-3366. Makers of talking terminals for the blind as well as other specialized devices for the visually impaired.

Network Services, Huguenot Professional Center, 1915 Huguenot Road, Richmond, VA 23235, (804) 379-2253. Designer of CAPTAIN which assesses and trains basic cognitive functions, including attention, concentration, memory, visual, motor and reasoning skills.

Oberon, McArthur Plaza, Suite 630, LB48, 5525 McArthur Blvd., Irving, TX 75062, (214) 257-0097. Makers of Omni-Reader which translates printed material directly to the computer.

Phonic Ear, Inc., 250 Camino Alto, Mill Valley, CA 94941-1490, (415) 383-4000. Makers of the Vois series of communications aids. The company offers a 2-week evaluation program, 1 month rental program, and month-to-month rental program to help customers decide appropriateness of products.

Prentke Romich Company, 1022 Heyl Rd., Wooster, OH 44691, (216) 262-1984. Company that provides products that access computers for the severely handicapped. Send for free brochure/catalog on Expressive Communication Aids.

Raised Dot Computing, 310 South 7th Street, Lewisburg, PA 17837, (717) 523-6739. Makers of Braille Edit Program and other computer applications for the blind.

Scott Instruments Corporation, 111 Willow Springs Drive, Denton, TX 76201, (817) 387-9514. Makers of the Shadow/Vet voice recognition board, Voice-based learning system and voice entry terminals.

Solutions By Example, Inc., 375 Concord Avenue., Belmont, MA 02178, (617) 489-4740. Makers of PC SPEAK speech synthesizer for the visually handicapped.

Street Electronics, 1140 Mark Avenue, Carpenteria, CA 93103. Makers of the Echo II Speech Synthesizer; and other devices.

Sweet Micro Systems, 150 Chestnut Street, Providence, RI 02903, (401) 273-5333. Maker of the Mockingboard speech synthesizer.

Syntalk Systems & Services, 375 South Mayfair Avenue, Suite 225, Daly City, CA 94015, (415) 991-7133. Prompt-Writer--a writing system designed for visually handicapped and others, using voice output.

Telesensory Systems, Inc., 455 North Bernardo Ave., P.O. Box 7455, Mountain View, CA 94039-7455, (415) 960-0920, telex 278838TSI UR. Manufacturers of systems which give blind and deaf-blind people independent access print.

Triformation Systems Inc., 3012 S.E. Jay Street, Stuart, FL 33497. Maker of braille printers and specialized terminals for the visually impaired.

Visualtek, 1610-26th Street, Santa Monica, CA 90404, (213) 829-6841. Makers of enlarged print viewing systems and other products for the visually impaired.

Voice Machine Communications, Inc., 1000 South Grand Avenue, Santa Ana, CA 92705, (714) 639-6150. Makers of IntroVoice--voice input system for personal computers.

Votrax, 500 Stephenson Highway, Troy, MI 48084, (800) 521-1350. Makers of Votrax Personal Speech System voice synthesizer.

Hearing Impaired

Audiobionics, 9913 Valley View Road, Eden Prairie, MN 55344, (612) 941-5464. Telecommunications device available for the hearing impaired and speech impaired.

Cyber-Serve, 5809 McGuire road, Edina, MN 55345. Fingerspeller 1, assists in learning the manual alphabet.

Helen Keller National Center, 111 Middle Neck Road, Sands Point, NY 11050, (516) 944-8900. Tactile Communicator which links to a smoke detector and/or a Baby Cry Signaler for deaf-blind population.

Micro Video, 314 North First Street, P.O. Box 7357, Ann Arbor, MI 48107, (313) 996-0626. Speech training system available for hearing impaired, vocal disorders, and English as second language.

Midwest Health Programs, Inc., Box 3023, Urbana, IL 61801. PC-Fingers, software that provides drill/practice opportunities to learn how to fingerspell.

Parrot Software, 190 Sandy Ridge Road, State College, PA 16803, (814) 237-7282. Software programs available for speech, language, or hearing impaired.

Software Research Corporation, 3939 Quadra Street, Victoria, B.C., Canada V8X 1J5, (604) 727-3744. Makers of the Visible Speech Aid, a speech training device for profoundly deaf children.

Ultratec, Inc., 6442 Normandy Lane, Madison, WI 53719, (608) 273-0707. Makers of telecommunication devices for the deaf.

The Universe Electric Research Company, 510 Florence Avenue, Webster Groves, MD 63119, (314) 961-7253. Makers of Lip Reader Trainer a computer programs for hearing impaired, as well as training in lip-reading.

Physically Handicapped

Adaptive Technology, Inc., 5334- 72nd Circle North, Brooklyn Center, MN 55429. Makers of keyboard shields for Apple II+, IIe, and IIc.

Alternative Communications System Project, Child Development and Mental Retardation Center, WJ-10, University of Washington, Seattle, WA 98195. Contact: Dr. Wesley Wilson, Project Director. Current project involves mounting a small computer on a wheelchair and having physically handicapped individuals communicate by using Morse Code.

Artra, Inc., P.O. Box 653, Arlington, VA 22216, (703) 527-0455. Producer of the Waldo voice input home control system for Apple II.

Bi-Comm systems, 10 Yorkton Industrial Court, St. Paul, MN 55117, (612) 481-0775. Produces remote control devices for the home.

Cacti Computer Services, 130 9th Street S.W., Portage La Prairie, Manitoba, CANADA R1N 2N4, (204) 857-8675. Producers of large pressure sensitive keyboard for the handicapped.

Cascade Graphics Development, 1000 South Grand Avenue, Santa Ana, CA 92705, (714) 558-3316. Manufacturer of CASH II voice controlled, full function professional computer workstation for the physically handicapped.

Heuristics, Inc., 1285 Hammerwood avenue, Sunnyvale, CA 94086, (408) 734-8532. Makers of Speech Link device which allows voice control of computer.

Interstate Electronics Corporation, 1001 East Ball Road, P.O. Box 3117, Anaheim, CA 92803, (714) 635-7210. Makers of voice recognition products.

The Motor Skills Corporation, P.O. Box 835, Rockville, MD 20853, (301) 946-0969. Makers of the Mototvator, a microcomputer that controls a variable speed moving target which serves as a focus for the development of a wide range of motor skills.

National Institute for Rehabilitation Engineering, 97 Decker Road, Butler, NJ 07405, (201) 838-2500. Producers of Unikey--a word processing program, and Onestroke Mail, a database and mail list program available for cassette and disk versions.

Polytel Computer Products Corporation, 2121 south Columbia, Suite 500, Tulsa, OK 74114, (918) 744-9844. Makers of specialized keyboards and extended keyboards.

Prentke Romich Company, 1022 Heyl Rd., Wooster, OH 44691, (216) 262-1984. Company that provides products that access computers for the severely handicapped. Send for free brochure/catalog on Expressive Communication Aids.

Rocky Mountain Software, Inc., 214-131 Water Street, Vancouver, B.C., V6B 4M3, Canada, (604) 681-3371. Makers of Handicapped Typewriter is a special software system for physically disabled people.

Sentient Systems Technology, Inc., 5001 Baum Boulevard, Pittsburgh, PA 15213, (412) 682-0144. Producers of Eyetyper, a communication system based solely on direct eye contact.

Softkey Systems, Inc., 4737 Hibiscus Avenue, Edina, MN 55435, (612) 926-4905. Producers of alternative keyboards for disabled persons with limited hand movement which can be used with any commercial software.

Street Electronics, 1140 Mark Avenue, Carpenteria, CA 93103. Makers of the Echo II Speech Synthesizer; and other devices.

Technical Aids to Independence, Inc., 12 Hyde Road, Bloomfield, NJ 07003, (201) 338-8826. Family of communicatory and control aids for physically/neurologically impaired.

Unicorn Engineering Company, 6201 Harwood Avenue, Oakland, CA 94618, (415) 428-1626. Producers of expanded keyboards for disabled.

Voice Machine Communications, Inc., 1000 South Grand Avenue, Santa Ana, CA 92705, (714) 639-6150. Makers of IntroVoice voice input system for personal computers.

Words+ Inc., 622 South Fair Oaks Avenue, Sunnyvale, CA 94086, (408) 730-9588. Supplies communications and home control devices for the handicapped using specialized input and output.

Zygo Industries, Inc., P.O. Box 1008, Portland, OR 97207-1008, (503) 297-1724. Wide range of communication systems and assistive devices. Ask for catalog.

Robotics

Androbot, 101 East Daggett Drive, San Jose, CA 95134, (408) 262-8676. Personal robot as computer peripheral with two-way communication link and extensive software capabilities.

D&M Computing, Inc., Box 2102, Fargo, ND 58107, (701) 235-7743. Robotics.

Eastern Machinery & Manufacturing, Inc., 850 South West Temple, Salt Lake City, UT, (801) 532-5430. Q-Bots, robotic components, and mind extenders available.

Harvard Associates, Inc., 260 Beacon Street, Somerville, MA 02143, (617) 492-2999. Turtle Tot programmable robot moves, draws with a pen, and can talk with a speech option.

Microbot, 453-H Ravendale Drive, Mountain View, CA 94043, (800) 227-8909. Low-cost programmable robot for flexible industrial automation.

Rhino Robots, Inc., 2505 South Neil, Champaign, IL 61820, (217) 352-8485. Robotics.

Specialized Input Devices

BFA Corporation, 1704 Moon N.E., Suite 3, Albuquerque, NM 87112, (505) 292-1212. Soft-Touch touch sensitive screens.

Carroll Touch Technology, 2902 Farber Drive, Champaign, IL 61821, (217) 351-1700. Touch panels.

Design Technology, 7760 Vickers Street, San Diego, CA 92111-1871, (619) 268-8194. Light pens.

Digital Techniques, Inc., 209 Middlesex Turnpike, Burlington, MA 01803, (617) 273-3495. Touch activated computing systems.

Educational Dimensions Training, P.O. Box 126, Stamford, CT 06904, (203) 327-4612. Touch-sensitive color monitor and authoring system.

Electro Mechanical Systems, Inc., 801 West Bradley Avenue, Champaign, IL 61820, (217) 359-7125. Custom touch panels and touch information displays.

Gibson Laboratories, 406 Orange Blossom, Irvine, CA 92714. LPS II, the high resolution, high speed light pen system.

Koala Technologies Corporation, 3100 Patrick Henry Drive, Santa Clara, CA 95052-8100, (408) 986-8866. Muppet Learning Keys Keyboard and Koala Pad.

MicroTouch, 400 West Cummings Park, Woburn, MA 01801, (617) 935-0080. Touch sensitive computer monitors.

Pencept, Inc., 39 Green Street, Waltham, MA 02154, (617) 893-6390. Penpad and software programs available.

Symtec, Inc., 22223 Telegraph Road, Southfield, MI 48034, (313) 352-1790. Light pen and peripheral products for Apples and others.

Tech-Sketch, Inc., 26 Just Road, Fairfield, NJ 07006, (201) 227-7724. Light pen for games and educational programs.

3-G Company, Inc., Rt. 3 Box 28A, Gaston, OR 97119, (503) 662-4492. Light pen for Commodore Pet 2001.

Technology, Inc., 107 Gilbraltar Street, Annapolis, MD 21401, (301) 269-6181. Touch sensitive devices and software products.

Adaptive Device Vendors

ADAPTIVE DEVICE VENDORS

Computer Aids Corporation, 4929 South Lafayette Street, Fort Wayne, IN 46806, (219) 456-2148. Pioneered the technology of integrating voice with computer interactions. Catalog available.

Don Johnston Developmental Equipment, 981 Winnetka Terrace, Lake Zurich, IL 60047, (312) 438-3476. Specializes in non-speech communication and computer access devices.

The Handicapped's Source, A division of: Intelligent Consumer Electronics, 526 Langfield, Northville, MI 48167, (313) 348-2793. Free catalog describing products and services for disabled individuals.

J.A. Preston Corporation, 60 Page Road, Clifton, NJ 07012, (201) 777-2700. Catalog available for equipment for rehabilitation and special education.

Prentke Romich Company, 8769 Twp. Rd. 513, Shreve, OH 44676-9421. Company that provides products that access computers for the severely handicapped. Send for free brochure/catalog on Expressive Communication Aids.

R.J. Cooper and Associates, 4050 South 548 East #5B, Murray, UT 84107, (801) 263-1388. Request catalog and information on services offered.

TASH, Inc., 70 Gibson Drive, Unit 1, Markham, Ontario, CANADA L3R 2Z3, (416) 475-2212. Catalog of adaptive devices available.

Teaching Tools: Microcomputer Services, P.O. Box 50065, Palo Alto, CA 94303, (415) 493-3477. Request software catalog and information about the use of computers in special education.

Texas Instruments (TI), Inc., P.O. Box 10508, M/S 5890, Lubbock, TX 79408, (800) 858-4565. Request catalog of software and adaptive devices. Contact Mary Fesler (415) 392-5700 for information about TI software and special education.

Zygo Industries, Inc., P.O. Box 1008, Portland, OR 97207-1008, (503) 297-1724. Wide range of communication systems and assistive devices. Ask for catalog.

Publications and Directories

PUBLICATIONS AND DIRECTORIES

Computer Technology for the Handicapped in Special Education and Rehabilitiation: A Resource Guide. **Rehabilitation Research and Training Center, University of Oregon, 1982. Available from ICCE, 135 Education, University of Oregon, Eugene, OR 97403, (503) 686-4414.** Includes more than 180 annotated citations from over 39 journals, over half dated since 1980.

Computers, Education, and Special Needs, by E. Paul Goldenberg, et al. **Addison-Wesley Publication Co., Reading, MA.** ($13.95)

ERIC Clearinghouse on Handicapped and Gifted Children Information Bulletin, **The Council of Exceptional Children, 1920 Association Drive, Reston, VA 22091-1589.** News items on all aspects of exceptional child education.

Learning Disabled Students and Computers: A Teacher's Handbook, **International Council for Computers in Education (ICCE), 135 Education, University of Oregon, Eugene, OR 97403.** A source book for teachers of the Learning Disabled. ($2.50).

Mindstorms: Children, Computers and Powerful Ideas by Seymour Papert. **New York: Basic Books, 1980.** Paper looks at the future of education and the computer language, LOGO. Although information does not pertain directly to special education, many of the ideas can be effectively used with handicapped students.

Microcomputer Resource Book for Special Education, by Dolores Hagen. **Reston Publishing Company, Reston, VA 22091.** A resource book for special educators that contains a section on selected software that may have applications for the learning disabled, hearing impaired, and mentally retarded. Most programs reviewed come from materials produced for regular education. They appear, from their producers' descriptions, to have qualities or features that could serve the needs of learning disabled students, hearing impaired, EMH, TMH, as well as other learning disabilities. Other programs reviewed were created by special education producers. ($15.95)

Micros in Special Education, Selection and Decision-Making Process, by Dr. Florence Taber. **Project RETOOL, Council for Exception Children, 1920 Association Drive, Reston, VA 22091, (703) 620-3660.** A paperback book produced by Project RETOOL on the use of microcomputers in Special Education.

Micro Technology in Special Education, by Andrew Rostron and David Sewell. **The John Hopkins University Press, Baltimore, Maryland 21218.**

National Library Service for the Blind and Physically Handicapped, The Library of Congress, 1291 Taylor Street, N.W., Washington, DC 20542, (202) 287-5100. This service has produced two publications on computer applications for blind and physically handicapped individuals. Copies are available free of charge.

Personal Computers for the Physically Disabled: A Resource Guide, Apple Computer, Inc., M/S 9H, 10260 Bandley Drive, Cupertino, CA 95014, (408) 996-1010. Free upon request, this booklet describes microcomputer applications for the handicapped and lists contacts for each program, device, publication or service discussed.

Proceedings From The National Conference On The Use Of Microcomputers In Special Education, Council for Exception Children, 1920 Association Drive, Reston, VA 22091, (703) 620-3660. Proceedings from the conference held March 10-12, 1983 in Hartford.

The Special/Ware Directory, A Guide to Software Sources for Special Education, Linc Associates, Inc., 416 Arden Rd., Columbus, OH 43214. This reference guide provides 61 pages of providers of hardware and software for special education, along with descriptions. ($13.95)

Special Technology for Special Children: Computers to Serve Communication and Autonomy in the Education of Hanicapped Children by E. Paul Golden berg. University Park Press, 233 East Redwood Street, Baltimore, MD 21202, 1979. ($14.95)

Periodicals and Journals

PERIODICALS AND JOURNALS

The Bulletin of Science and Technology for the Handicapped, American Association for the Advancement of Science, 1515 Massachusetts Avenue, Washington, DC 20005.

Baud, Audio-Tech Laboratories, c/o Joe Giovanelli, 1158 Stewart Avenue, Bethpage, NY 11714. (Bimonthly, $18/year)

Blind Data Processor, National Library Services regional and subregional libraries, Braille. (Bimonthly, free)

Braille Research Newsletter, University of Warwick, Warwick Research Unit for the Blind, Coventry, England CV4 7AL. (Semi-annual, $6/issue)

Bulletin on Science and Technology for the Handicapped, Project on the Handicapped in Science, American Association for the Advancement of Science, 1776 Massachusetts Avenue, Washington, DC 20036. (Quarterly, free)

The Catalyst, Western Center for Microcomputers in Special Education, Inc., Suite 275, 1259 El Camino Real, Menlo Park, CA 94025, (415) 326-6997. This newsletter covers the spectrum of special ed./microcomputer topics, including software, hardware and pertinent regulations. (bimonthly; $12/year for individuals, $20 for agencies; complementary copies sent on request)

Closing The Gap, Route 2, Box 39, Henderson, MN 56044, (612) 665-6573. Compact newspaper that provides information about microcomputer programs and devices that help handicapped individuals "close the gap" between themselves and the rest of society. (bimonthly; $15/year, single copies $3)

Communication Outlook, Artificial Language Laboratory, Computer Science Department, Michigan State University, East Lansing, MI 48824. (Quarterly, $4.50/issue or $12/year)

Computers, Recorded Periodicals, 919 Walnut Street, Philadelphia, PA 19107. (Monthly, $18/year, $36/year if cassettes are purchased)

The Computing Teacher, 1787 Agate Street, University of Oregon, Eugene, OR 97403. ($21.50/9 issues)

COPH Bulletin, Congress on the Physically Handicapped, 101 Lincoln Park Blvd., Rockford, IL 61102.

Courseware Review, Jounal of Learning Disabilities, 5615 W. Cermack Road, Cicero, Illinois 60650. A monthly feature that includes one or more reviews that relates to uses for learning disabled populations. (10 issues per year/$36.00 or $4.00/issue)

Datamation-Plus, Recorded Periodicals, 919 Walnut Street, Philadelphia, PA 19107. (Monthly, $18/year, $36/year if cassettes are purchased)

Journal of Learning Disabilities, Editor-in-Chief Gerald M. Senf, 1331 East Thunderhead Drive, Tucson, AZ 85718. This journal features articles on microcomputer-based applications for learning disabled students. It includes a section called "Computers in the Schools" and courseware reviews with each issue. ($32 for 10 issues/year)

Journal of Special Education Technology, Exceptional Child Center, Utah State University, UMC 68, Logan, UT 84322. Directed primarily to administrators, researchers, and teachers, this journal publishes information, research, technology reviews, and reports on innovative applications of educational technology furthering the development and education of exceptional children. ($17.00/4 issues)

Journal of Visual Impairment and Blindness, American Foundation for the Blind, 15 West 16th Street, New York, NY 10011. (Monthly, $20/year)

Learning Disability Quarterly, Journal of the Council for Learning Disabilities, P.O. Box 830688, University of Texas at Dallas, Richardson, Texas 75083. These reviews focus on software that is appropriate for use with learning disabled populations. Features items related to product, and a general reaction to the product. ($30.00/year, individual copies $5.00)

Link and Go, 2030 Irving Park Road, Chicago, IL 60618. (Quarterly, $8/year)

Lspi News, Library Services for the Physically Impaired, Founders Memorial Library, Northern Illinois University, Dekalb, IL 60115. (Quarterly, free)

National Braille Press, 88 South Stephen Street, Boston, MA 02115, (617) 266-6160. Reviews by blind users of six microcomputers with speech synthesizers. Also provides lists of resources for blind users, technical terms, programming and computer clubs and computer terms.

School Microcomputing Bulletin, **Learning Publications, Inc., P.O. Box 1326, Holmes Beach, FL 33509.** Microcomputing trends and educational computing applications are reported in this Bulletin, which also includes information on sources of materials, software evaluations, workshops, and special field reports by educators. ($28.00/10 issues)

Sensory Aids Technology Update, **399 Sherman Ave, Suite 12, Palo Alto, CA 94306.** Monthly newsletter published by the Sensory Aids Foundation dealing with technology and employment issues of the disabled (Monthly, $30/year).

Smith-Kettlewell Technical File, **Smith-Kettlewell Eye Research Foundation, 2232 Webster Street, San Francisco, CA 94115.** (Quarterly, $15/year)

Special Education Software Review, **Drive One Publishers, LTD., N. Northwood Avenue, Peoria, IL 61614.** The Special Software Review is an independent newsletter written by special educators. It is dedicated to assisting professionals and parents in the selection of quality computer software for handicapped individuals. It is published five times during the school year. Index for the 1984-85 year included reviews in math, reading and language arts, logic and reasoning, early childhood, word processing, special titles. ($25.00/year)

Teaching, Learning, Computing, **Seldin Publishing, Inc., 1061 South Melrose, Suite D, Placentia, CA 92670-7180.** A new magazine geared toward classroom teachers who are interested in personal computing. ($24.00/10 issues)

Software Evaluation Sources

SOFTWARE EVALUATION SOURCES

Closing The Gap, P.O. Box 68 Henderson, MN 56044. An excellent publication for special educators, especially those who serve the severly handicapped. This bi-monthly newsletter contains numberous software reviews as well as articles on computer and technology uses for the handicapped. ($18.00 per year)

ConnSENSE (Connecticut Special Education Network for Software Evaluation), University of Connecticut, U-64, Storrs, CT 06268. The overall goal of ConnSENSE has been to develop and field test an evaluation model to review effectiveness of special education, microcomputer software, train special educators in software evaluation, and to disseminate the results within Connecticut and beyond. ConnSENSE evaluations are published in The ConnSENSE Bulletin.

Digest of Software Reviews: Education, 1341 Bulldog Lane, Suite C, Fresno, CA 93710. The Digest of Software Reviews: Education (edited by Ann Lathrop) is a quarterly publication (regular subscription $47.95-school $42.95) which provides digests of evaluations of educational software. In each issue digests of over 250 reviews of 50 software programs are included giving readers a broad perspective of each program.

Epie Institute, P.O. Box 839, Water Mill, NY 11976, (516) 283-4922. Educations only consumer supported educational product evaluation agency. Software evaluation products include micro PRO/FILE software evaluations ($360/year) and TESS, an 800 pages compendium of almost 7,000 software programs described with 3,000 product evaluations citations from EPIE and 30 other evaluation sources.

FDLRS/Tech (Florida Diagnostic and Learning Resources System), 1450 Martin Blvd., Merritt, Iowa 32952, (305) 631-1911. Coordinates statewide software evaluation process, maintains information clearing house on instructional technology, disseminates information and resource materials, develops training and technology assistance materials and provides training and technology assistance to district personnel.

Learning Disability Quarterly, P.O. Box 830688, University of Texas at Dallas, Richardson, Texas 75083. Producer of Journal of the Council for Learning Disabilities. These reviews focus on software that is appropriate for use with learning disabled populations. Features items related to product use, and a general reaction to the product. ($30.00 per year, individual copies $5.00)

MICC (Microcomputer Information Coordination Center), University of Kansas Medical Center, Room 139, CRU, 39th and Rainbow, Kansas City, KS 66103. Title VI B project funded by Kansas State Education Department. The primary goal is the implementation and coordination of statewide activities related to microcomputers and special education. Activities include coordination of the special net telecommunication system for the state and statewide software evaluation.

MicroSIFT, Northwest Regional Educational Laboratory, 300 S.W. Sixth Avenue, Portland, OR 97204. A clearinghouse for descriptive and evaluative information about microcomputer instructional software and teacher information.

SECTOR (Special Education Computer Technology Online Resource), UMC-68, Utah State University, Logan, UT 84322. The SECTOR project is funded by the Utah State Office of Education- Special Education Section. SECTOR provides informational and technical assistance to special educators. Products relevant to special education technology uses are also available.

Special Education Software Center, Building B, Room S312, 333 Ravenswood Avenue, Menlo Park, CA 94025, (800) 827-5892. Provides information on what software is available for special education applications as well as providing technical assistance to programmers to improve special education software by developing computer programming subroutines.

Special Education Software Review, Drive One Publishers, LTD., N. Northwood Avenue, Peoria, Illinois 61614. The Special Education Software Review is an independent newsletter written by Special Educators. It is dedicated to assisting professional and parents in the selection of quality computer software for handicapped individuals. It is published five times during the school year. ($25.00 per year)